



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,602	10/24/2003	Charlene W. Bayer	163.1773USU1	6490
6980	7590	11/01/2006	EXAMINER	
TROUTMAN SANDERS LLP 600 PEACHTREE STREET, NE ATLANTA, GA 30308			DRODGE, JOSEPH W	
			ART UNIT	PAPER NUMBER
			1723	
DATE MAILED: 11/01/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,602

Applicant(s)

BAYER ET AL.

Examiner

Joseph W. Drodge

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-12, 15-18, 20-22, 24 and 33-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12, 15-18, 20-22, 24 and 33-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0105
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

The Rule 131 Affidavits filed on October 19, 2006 under 37 CFR 1.131 is sufficient to overcome the prior art rejections made in the Final Rejection of June 19, 2006 and overcomes all of the applied references, relied upon therein.

Applicant's request for reconsideration of the finality of the rejection of the last Office action, in view of the Rule 131 Affidavits filed October 19, 2006 is persuasive and, therefore, the finality of that action is withdrawn.

Claim 45 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is no antecedent basis for "the substrate" in claim 45, since claim 35 does not recite a substrate.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 1723

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3,5,11,15,16,34-36,38,41 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heskett et al patent 3,538,020, of record. For the independent claims, Heskett discloses a gas filter (column 1, lines 58-66) for adsorbing contaminants (column 2, lines 21-24 denote the structure as comprising ion-exchange resin, activated charcoal and/or greensand, all of which have adsorption properties, particularly the ion exchange material), the structure also including a polymer matrix and reactive additives (column 2, lines 21-30). Heskett is silent as to specific capacity of adsorption, however it is obvious to the skilled artisan that the varied polymers (column 3, lines 55-58 and adsorption additives (disclosed in column 3, line 72-column 4, line 23) have a wide range of capacity depending upon specific gas being treated and specific types of contaminants removed. Similarly for claims 2 and 36, the polymer diffusivity obviously varies over a wide range since column 3, lines 55-58 state that a range of diverse polymer combinations may be employed. For claim 3, polydimethylsiloxane is disclosed at column 4, lines 55-57. For claims 5 and 38, the additives at least comprise water (see column 6, lines 25-27). For claim 11, the additives may be uniformly distributed (column 5, lines 54-55). For claim 15, non-

Art Unit: 1723

reactive additives such as cross-linking agents are disclosed at column 7, lines 66-68). For claims 16 and 41, water may constitute such non-reactive additive, when it is used to pre-shape the polymer (column 6, lines 44-48). For claim 45, see housing, such as a "filter cartridge" at column 11, lines 1,40 etc.

Claims 4 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heskett et al as applied to claims 1-3,35 and 36 above, and further in view of Kusanose et al patent 3,936,394. Claims 4 and 37 additionally require polyacrylamide polymer. Kusanose (column 4, lines 28-48) and (column 2, lines 22-32) teach polyacrylamide or similar polymers in a gas adsorption filter. It would have been obvious to have employed a polymer such as polyacrylamide in the Heskett device/method to adsorb a rich variety of different substances and contaminants.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heskett et al as applied to claims 1 and 5 above, and further in view of Hirata et al patent 6,352,579. Claim 8 requires a sulfonic acid additive. Hirata teach at column 5, lines 62-65 to include sulfonic acid for the purpose of providing a cation exchange group.

Claims 7, 9,12,18,20-22,24,33, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heskett et al as applied to claims 1 and 5 above, and further in view of Kusanose et al.

Claims 7 and 9 additionally require one of additives to comprise an amine. Kusanose teach including an amine at column , lines for the purpose of .

Claim 12 requires the additives to form a layer in contact with but separate from a polymer matrix. Such structure is taught by Kusanose at column 11, lines 57-67 so as to form a laminate structure having ability to withstand fluid pressure and tensile stress.

Claims 18,20-22,24 and 42-44 require a substrate. Kusanose teach to use a substrate in a gas adsorption filter at column 11, line 55-column 12, line 34 to provide support for the adsorption matrix and form a laminate structure having ability to withstand fluid pressure and tensile stress. The substrate may be a polyamide, a cellulosic material or other of the polymers listed in claims 20,21,43 and 44, see Kusanose at column 12, lines 6-12. Heskett disclose to house the adsorption filter in a cartridge at column 11, lines 1 and 40 for claim 22.

For claim 33, Kusanose also teach at column 2, lines 43-44 and column 9, lines 18-23 that an adsorption filter may also remove biological contaminants by using materials having biostat properties.

Claims 10 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heskett et al as applied to claims 1-3,5 and 35 and further in view of Koper et al patent 6,057,488. Koper et al teach at column 2, lines 21-52, etc.to include nanoparticles in a system for filtering or adsorbing contaminants from a fluid, since nanostructured adsorbents can be tailored to adsorb a wide variety of biological and chemical agents.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heskett et al as applied to claim 1, and further in view of Hirata et al patent 6,352,579 and Kusanose et al patent 3,936,394. Claim 17 additionally requires polyacrylamide

Art Unit: 1723

polymer. Kusanose (column 4, lines 28-48) and (column 2, lines 22-32) teach polyacrylamide or similar polymers in a gas adsorption filter. It would have been obvious to have employed a polymer such as polyacrylamide in the Heskett device/method to adsorb a rich variety of different substances and contaminants. Claim 17 also requires a sulfonic acid additive. Hirata teach at column 5, lines 62-65 to include sulfonic acid for the purpose of providing a cation exchange group.

Applicant's arguments with respect to claims 1-5, 7-12, 15-18, 20-22, 24 and 33-45 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

Application/Control Number: 10/693,602


Page 7

Art Unit: 1723

have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

October 27, 2006


JOSEPH DRODGE
PRIMARY EXAMINER